

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 27

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RALPH NIVEN and COLIN G. PITT

Appeal No. 1996-3791
Application 08/028,087¹

ON BRIEF

Before WILLIAM F. SMITH, SPIEGEL and SCHEINER, Administrative Patent Judges.

WILLIAM F. SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal pursuant to 35 U.S.C. § 134 from the final rejection of claims 29 through 33 and 46 through 55.² Claims 1 through 28, the only other claims pending in the application, have been withdrawn from further consideration under

¹ Application for patent filed March 8, 1993.

² Appellants submitted a corrected appendix of the appealed claims as an attachment to the reply brief filed January 29, 1996. This corrected appendix includes claims 53-55 which were erroneously omitted in the brief. The examiner noted in his supplemental answer entered May 15, 1996 that these claims were treated on the merits.

37 CFR § 1.142(b) as not readable on the elected invention. The subject matter of the claims on appeal is directed to a method for the systemic administration of pegylated granulocyte colony stimulating factor (G-CSF).

Representative claim 29 is reproduced below:

29. A method for the systemic administration of pegylated G-CSF, comprising depositing a therapeutically effective amount of said pegylated protein optionally in a pharmaceutically acceptable carrier in the lungs of a mammal in need thereof while the mammal is inhaling.

Prior art references relied upon by the examiner as evidence of obviousness are:

Platz et al. (Platz)	5,284,656	Feb. 8, 1994
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Eur. Pat. App. (Ishikawa)	A1 401 384	Dec. 12, 1990
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Debs et al. (Debs), "Lung-Specific Delivery of Cytokines Induces Sustained Pulmonary and Systemic Immunomodulation in Rats," Journal of Immunology, Vol. 140, No. 10, pp. 3482-488 (May 15, 1988).

Takada et al. (Takada), "Evidence for the Pulmonary Absorption of Fluorescent Labelled Macromolecular Compounds," J. Pharm. Dyn., Vol. 1, pp. 281-87 (1987).

The appealed claims 29 through 33 and 46 through 55 stand rejected under 35 U.S.C. § 103.³ As evidence of obviousness, the examiner relies upon Ishikawa,

Platz and Takada. We note that this is a new ground of rejection (Examiner's Answer,

³ The amendment filed May 22, 1995 (Paper No. 16), amending claims 29-31 and 46-52 and cancelling claims 34-37, 39-45 and 56-59, was authorized entry by the examiner in the advisory action mailed June 21, 1995 (Paper No. 19), who also indicated that the amendment overcame the final rejection of claims 29-33 and 46-55 under 35 U.S.C. § 112, first paragraph (lack of enablement).

page 3) to which appellants responded by way of Reply Brief (Paper No. 22).

BACKGROUND

The present invention is directed to pulmonary administration of pegylated G-CSF (specification, page 5). The claimed invention is based on the “broad discovery that a protein to which a polyethylene glycol molecule has been attached may be absorbed by the lung into the bloodstream” (specification, page 5). According to appellants, pulmonary administration of pegylated proteins has not been previously demonstrated (specification, page 4). Appellants also state that polyethylene glycol (PEG) is not expected to cross hydrophobic membranes to any significant degree because it is a large hydrophilic molecule (specification, page 6). Finally, appellants also argue in page 5 of the Reply Brief that:

One would have expected delivery directly to the heart to result in more immediate biological activity [i.e., proliferation of total circulating white blood cells] because of delivery directly to the bloodstream, than delivery to the lung, where the transport across the lung was necessary. Figure 17 shows that for pegylated G-CSF, lung delivery and heart delivery were very comparable.

THE REJECTION UNDER 35 U.S.C. § 103

The examiner relies on the combination of Ishikawa, Platz and Takada as

evidence of obviousness (Examiner's Answer, pages 4-5).

Ishikawa discloses that the pegylation of G-CSF results in longer retention of G-CSF in mice than the natural version (Example II, page 26). The reference is directed to prolonging the half-life of G-CSF to enhance its effect (Ishikawa, paragraph bridging pages 2-3). Ishikawa mentions the size of the PEG as being between 500 to 20,000 Da (page 5, last par. of reference). Ishikawa also discloses the use of oral administration of the pegylated protein (Ishikawa, page 9). There is no express disclosure of what constitutes oral administration.

Platz (Abstract) discloses the pulmonary administration of unpegylated G-CSF. While Platz discloses the general method of administration, the reference does not contemplate the administration of chemically modified G-CSF.

Takada provides a discussion related to the size of the molecules that can be absorbed from the lungs into the bloodstream. This reference is directed to address appellants' argument that administration of the particular pegylated protein as claimed has not been proven as feasible (Examiner's Answer, pages 6-7). However, Takada is directed to a general analysis of the absorption of macromolecular compounds ranging from 45,000 to 230,000 Da via pulmonary absorption (Takada, pages 284-286). There is no disclosure of pegylated G-CSF.

It is the examiner's position that it would have been obvious to a person with ordinary skill in the art at the time the invention was made to administer pegylated

G-CSF to the lungs of mammals (Examiner's Answer, page 5).

We need not determine whether the references establish a prima facie case of obviousness. Appellants have relied upon rebuttal evidence in response to this new ground of rejection (Reply Brief, page 5). As stated in In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986):

If a prima facie case is made in the first instance, and if the applicant comes forward with reasonable rebuttal, whether buttressed by experiment, prior art references, or argument, the entire merits of the matter are to be reweighed. In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984).

We find no response by the examiner indicating that the rejection was reconsidered in light of this rebuttal evidence. The Supplemental Examiner's Answer (Paper No. 23) does not acknowledge or take into account this portion of appellants' position. This is legal error on the examiner's part.

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The decision of the examiner, accordingly, is reversed.

REVERSED

WILLIAM F. SMITH
Administrative Patent Judge

CAROL A. SPIEGEL
Administrative Patent Judge

TONI R. SCHEINER
Administrative Patent Judge

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